OZ1.2

indicator	ozone
Application	Swimming pool water, drinking water, service water, process water The water must not contain any surfactants (tensides)!
Measuring system	Membrane covered, amperometric 2-electrode system
Electronic	Analog version: - voltage output - not galvanically isolated electronics - analog internal data processing - output signal: analog (analog-out/analog) Digital version: - electronic is completely galvanically isolated - digital internal data processing - output signal: analog (analog-out/digital) or digital (digital-out/digital) mA-version: - current output analog - not galvanically isolated electronics - output signal: analog (analog-out/analog)
Information about the measuring range of sensors with 4-20 mA	Slope of a sensor can vary production-related or application-related between 65% and 150% of the nominal slope -> Recommendation to determine the suitable measuring range or the suitable sensor: Concentration to be measured x factor 1.5 = measuring range of the sensor Example: Concentration to be measured 1.6 ppm x 1.5 = 2.4 -> recommended sensor with a measuring range of 5 ppm
Slope drift At repeatability conditions (25 °C, pH 7,2 in drinking water)	approx. <-1% per month
Working temperature	Measuring water temperature: 0 … +45 °C (no ice crystals in the measuring water)
	Ambient temperature: 0 … +55 °C
Temperature compensation	Automatically, by an integrated temperature sensor Sudden temperature changes must be avoided
Max. allowed working pressure	Operation without retaining ring: 0.5 bar, no pressure impulses and/or vibrations
	Operation with retaining ring: 1.0 bar, no pressure impulses and/or vibrations
Flow rate	approx. 15-30L/h in DF, small flow rate dependence is given
pH-range	pH 2 – pH 11

	# OZ1.2
Run-in time	First start-up approx. 1 h
Response time	T_{90}: approx. 15 sec.
Zero point adjustment	Not necessary
Slope calibration	At the device, by analytical determination
interferences	Cl_2: factor 0.03 ClO_2: factor 0.7
Absence of the disinfectant	Max. 24 h
Connection	analog-out/analog version: 4-pole plug adapter analog-out/digital version: 4-pole plug adapter digital-out/digital version: 5-pole M12, plug-on flange 4-20 mA version: 2-pole terminal or 5-pole M12, plug-on flange
material	Semipermeable membrane, PVC-U, ABS
Size	diameter: approx. 25 mm Length: analog-out/analog version approx. 175 mm analog-out/digital version approx. 195 mm digital-out/digital version approx. 205 mm 4-20 mA version approx. 220 mm (2-pole-terminal) approx. 190 mm (5-pole-M12)
Transport	+5 … +50 °C (sensor, electrolyte, membrane cap)
storage	Sensor: dry and without electrolyte no limit at +5 … +40 °C
	Electrolyte: in original bottle protected from sunlight at +5 … +35 °C min. 1 year or until specified EXP-Date
	Membrane cap: in original packing no limit at +5 … +40 °C (used membrane caps can not be stored)
maintenance	Regularly control of the measuring signal, min. once a week The following specifications depend on the water quality: Change of the membrane cap: once a year (depending on the water quality) Change of the electrolyte: every 3 - 6 months
CE	EMC-Testing DIN EN 61326-1, 61326-2-3 RoHS compliant

Technical Data

1. OZ1.2 (analog output, analog internal signal processing)

analog-out / analog

A potential-free electrical connection is necessary as the sensor electronic is not equipped with a galvanical isolation.

	**Measuring range** **in ppm**	**Resolution** **in ppm**	**Output** **Output resistance**	**Nominal slope** **in mV/ppm**	**Voltage supply**	**Connection**
OZ1.2H	0.005…2.000	0.001	0…-2000 mV 1 kΩ	-1000	±5 - ±15 VDC 10 mA	4-pole screw connector
OZ1.2N	0.05…20.00	0.01		-100		
OZ1.2HUp	0.005…2.000	0.001	0…+2000 mV 1 kΩ	+1000	10 - 30 VDC 10 mA	
OZ1.2NUp	0.05…20.00	0.01		+100		

(Subject to technical changes!)

2. OZ1.2 (analog output, digital signal processing)

Analog-out / digital

- The power supply is galvanically isolated inside of the sensor.
- The output signal is galvanically isolated too, that means potential-free.

	**Measuring range** **in ppm**	**Resolution** **in ppm**	**Output** **Output resistance**	**Nominal Slope** **in mV/ppm**	**Power supply**	**Connection**
OZ1.2H-An	0.005…2.000	0.001	analog 0…-2 V (max. -2.5 V) 1 kΩ	-1000	9-30 VDC approx. 56-20 mA	4-pole screw connector
OZ1.2N-An	0.05…20.00	0.01		-100		
OZ1.2H-Ap	0.005…2.000	0.001	analog 0…+2 V (max. +2.5 V) 1 kΩ	+1000		
OZ1.2N-Ap	0.05…20.00	0.01		+100		

(Subject to technical changes!)

3. OZ1.2 (digital output, digital signal processing)

digital-out / digital

- The power supply is galvanically isolated inside of the sensor.
- The output signal is galvanically isolated too, that means potential-free.

	**Measuring range** **in ppm**	**Resolution** **in ppm**	**Output** **Output resistance**	**Power supply**	**Connection**
OZ1.2H-M0c	0.005…2.000	0.001	Modbus RTU There are no terminating resistors in the sensor.	9-30 VDC approx. 56-20 mA	5-pole M12 connector
OZ1.2N-M0c	0.05…20.00	0.01			

(Subject to technical changes!)

4. OZ1.2 4-20 mA (analog output, analog internal signal processing)

analog-out / analog

A potential-free electrical connection is necessary as the sensor electronic is not equipped with a galvanical isolation.

4.1 Electrical connection: 2 pole terminal clamp

	**Measuring range** **in ppm**	**Resolution** **in ppm**	**Output** **Output resistance**	**Nominal slope** **in mA/ppm**	**Voltage supply**	**Connection**
OZ1.2MA0.5	0.005…0.500	0.001	4…20 mA uncalibrated	32.0	12…30 VDC R_L 50Ω…R_L 900Ω	2-pole terminal (2 x 1 mm²) Recommended: Round cable ∅ 4 mm 2 x 0.34 mm²
OZ1.2MA2	0.005…2.000	0.001		8.0		
OZ1.2MA5	0.05…5.00	0.01		3.2		
OZ1.2MA10	0.05…10.00	0.01		1.6		
OZ1.2MA20	0.05…20.00	0.01		0.8		

(Subject to technical changes!)

4.2 Electrical connection: 5 pole M12 plug-on flange

	**Measuring range** **in ppm**	**Resolution** **in ppm**	**Output** **Output resistance**	**Nominal slope** **in mA/ppm**	**Voltage supply**	**Connection**
OZ1.2MA0.5-M12	0.005…0.500	0.001	4…20 mA uncalibrated	32.0	12…30 VDC R_L 50Ω…R_L 900Ω	5-pole M12 plug-on flange Function of wires: PIN2: +U PIN3: -U
OZ1.2MA2-M12	0.005…2.000	0.001		8.0		
OZ1.2MA5-M12	0.05…5.00	0.01		3.2		
OZ1.2MA10-M12	0.05…10.00	0.01		1.6		
OZ1.2MA20-M12	0.05…20.00	0.01		0.8		

(Subject to technical changes!)

Spare Parts

Type	**Membrane cap**	**Electrolyte**	**Emery**	**O-ring**
For all OZ1.2	M20.2	EOZ1/W, 100 ml	S1	14 x 1.8 silicone

(Subject to technical changes!)